Gokhale Education Society's
Sir Dr. M.S. Gosavi College of Pharmaceutical Education & Research, Nashik.
Prin. T. A. Kulkarni Vidynagar, Nashik - 422005. (M.S.), India

Affilated to SPPU, Pune & MSBTE, Mumbai • Approved by PCI, New Delhi and DTE, Mumbai • Recognized by Govt. of Maharashtra

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An ISO 9001:2015 Certified Institute

Prin. Dr. Sunil V. Amrutkar
M. Pharm., Ph.D. (Pharmaceutical Chemistry)

Ref. No. : GES/MSGCOPER/

Date :

Sir Dr. M. S. Gosavi College of Pharm. Edu. & Research ★ NASHIK-5

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Programme Outcomes (POs)

PO1	**Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioural, social, and administrative pharmacy sciences; and manufacturing practices.
PO2	**Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
PO3	**Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly, and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
PO4	**Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
PO5	**Leadership skills:** Understand and consider the human reaction to change, motivation issues, leadership and team building when planning changes required for fulfilment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
PO6	**Professional Identity:** Understand, analyse and communicate the value of their professional roles in society (e.g., health care professionals, promoters of health, educators, managers, employers, employees).
PO7	**Pharmaceutical Ethics:** Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behaviour that recognizes cultural and personal variability in values, communication, and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
PO8	**Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
PO9	**The Pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
PO10	**Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO11	**Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

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COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-II)
FIRST YEAR B. PHARM

Course : HAP-II(BP201T)
Academic Year : 2021-2022
Name of Faculty : Ms. Gargi A. Kapadnis

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO1	Knowledge of the gross morphology, structure and functions of various organs of the human body.
CO2	Understanding of the various homeostatic mechanism and their imbalances.
CO3	Differentiate between the various tissues and organs of different systems of human body.
CO4	Understand the related knowledge of special senses and nervous system.
CO5	Understanding the co-ordination and working pattern of different organs of each system.

Course : HAP II (BP 207P)
Academic Year : 2021-2022
Name of Faculty : P. S. Patil, G.A. Kapadnis

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand physiology of sense organs.
CO 2	Explain and discuss importance of endocrine system in maintenance of homeostasis and continuity of life.
CO 3	Relate the influence of hypnotic, hypertonic and isotonic solution on cellular integrity of red blood cells (RBCs)
CO 4	Analyze and conclude physiology of autonomic nervous system (ANS) and central nervous system (CNS).
CO 5	To count the platelet, DLC and neutrophils and its significance.
CO 6	Study of different systems of human body with specimen.
CO 7	Determination of various test to check homeostasis.
CO 8	Introduction of family planning devices and pregnancy diagnosis test and observe slides.

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Course : **POC -I (BP202 T)**
Academic Year : **2021-2022**
Name of Faculty : **Mr. Purkar S.R.**

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand and explain the concepts of hybridization, electronic and steric effects of organic molecules, stereochemistry and appreciate the chemistry of hydrocarbons.
CO 2	To write the structure, name and type of isomerism of organic compounds.
CO 3	Acquire knowledge about preparation and reactivity of compounds with functional groups, such as Alkanes, Alkenes, Alkyl halides, Aldehydes, and Ketones, Carboxylic acids, Alcohols and Amino compounds.
CO 4	Explain the mechanism involved in the substitution, addition, nucleophilic and elimination reactions.
CO 5	To study the reactivity/ stability of compounds.
CO 6	Identify and study the structure and uses of organic compounds.

S.P. Purkar

Course : POC -I(BP 208P)
Academic Year : 2021-2022
Name of Faculty : Mr. Purkar S.R.

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	To study various safety measures in an Organic Chemistry Laboratory.
CO 2	To develop the skill of purification technique for organic compounds.
CO 3	To study the Systematic Qualitative Analysis of Unknown Organic Compounds.
CO 4	To understand the reaction and its mechanism involved in preparation of derivatives.
CO 5	To develop the skill for construction various Molecular Models.

S.P. Purkar

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Course : Biochemistry I(BP203T)
Academic Year : 2021-2022
Name of Faculty : H.U. Chikhale

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	To understand the molecular levels of chemical nature and biological role of cell, cell organelles and various metabolic processes of carbohydrates, lipids and amino acid in cell metabolism.
CO 2	Elaborate the catalytic role of enzymes and importance of enzymes in biochemical process and its applications.
CO 3	To understand the genetic organizationn and functions of DNA/RNAS, synthesis and break down of purines and pyrimidines in nucleic acid metabolism and proteins.
CO 4	Illustrate the concept of free energy, endergonic and exergonic reaction and biological significance of ATP and cAMP.

Course : Biochemistry I(BP 209 P)
Academic Year : 2021-2022
Name of Faculty : H.U. Chikhale/S.P. Shelke

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Analyze and estimate protein, amino acid, carbohydrate from given sample by qualitative, quantitative test.
CO 2	To analyze urine for abnormal constituents by qualitative analysis.
CO 3	To study blood creatinine, blood sugar, and serum total cholesterol.
CO 4	To know mechanism of action of salivary amylase on starch
CO 5	To study buffer solution and measurement of pH.

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Course : Pathophysiology I (BP 204 T)
Academic Year : 2021-2022
Name of Faculty : Ms. Deepali D. Bhandari

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Explain the biochemical mechanisms responsible for cell injury and inflammation.
CO 2	Describe the etiology and pathogenesis of the selected disease states.
CO 3	Elaborate the rationale and theoretical basis for methods used in the diagnosis of common biochemical disorders.

Course : Computer Application in Pharmacy (BP 205 T)
Academic Year : 2021-2022
Name of Faculty : Ms. Krutika H. Pardeshi

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand basic principles of computer and number system of computer.
CO 2	Know the various types and application of computers in pharmacy.
CO 3	Acquire the knowledge about various types of databases, software's, web technologies.
CO 4	Know the various applications of databases in pharmacy
CO 5	Able to understand bioinformatics and impact of bioinformatics in vaccine discovery.

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Course : Computer Application in Pharmacy (BP 210P)
Academic Year : 2021-2022
Name of Faculty : Ms. Krutika H. Pardeshi

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Design set of questionnaires, create HTML web page, mailing labels in lable wizards.
CO 2	Retrieve drug information using online tool, create database in MS Access.
CO 3	Create report and printing report from patient's database
CO 4	Create invoice table and drug information retrieval using MS Access
CO 5	Create queries in MS Access, export queries, tables, forms, report in web and XML page.

Course : Environmental Science (BP 206 T)
Academic Year : 2021-2022
Name of Faculty : Vipulata R. Yeole

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Clarify basics of environment like ecology, ecosystem, food chain, food web and ecological pyramids.
CO 2	Understand the current problems of environment and how to solve them.
CO 3	Know and aware about factors of environmental pollution and hazards of disposal wastes from hospitals and pharmaceutical industries.
CO 4	Know the role of individual in conservation of natural resources and effort to save the environment

Yeole

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COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-II)
SECOND YEAR B. PHARM

Course : POC III (BP 401 T)
Academic Year : 2021-2022
Name of Faculty : K.R. Dandagvhal

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand the methods of preparation and properties of organic compounds.
CO 2	Explain the stereochemical aspects of organic compounds and stereo chemical reactions.
CO 3	Know the medicinal uses and other applications of organic compounds
CO 4	Explain Reaction mechanism of name reaction

Course : Medicinal Chemistry(BP 402 T)
Academic Year : 2021-2022
Name of Faculty : Dr. S. S. Harak

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Summarize History and development of medicinal chemistry.
CO 2	Correlate physicochemical properties with biological action and metabolism of drugs.
CO 3	Understand the chemistry with respect to their pharmacological activity,drug metabolic pathways, adverse effect and therapeutic value of some CNS and PNS active drugs.
CO 4	Know the Structural Activity Relationship (SAR) of different classes of some CNS and PNS active drugs.
CO 5	Write the chemical synthesis of some drugs.

Course : Medicinal Chemistry(BP 406 P)
Academic Year : 2021-2022
Name of Faculty : K.R. Dandagvhal

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Demonstrate synthesis and purification of selected drugs and drug intermediate.
CO 2	Illustrate the chemical reaction and reaction mechanism involved in synthesis.
CO 3	Perform TLC for monitoring of reaction and purification of synthesized compound by column chromatography.
CO 4	Determine partition coefficient and ionization constant for organic compound.

Course : Physical Pharmaceutics(BP 403 T)
Academic Year : 2021-2022
Name of Faculty : Ms. Punam Dilip Bagad

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand the basics of dispersed system, its properties, types & different parameters affecting to colloidal dispersions; basics of deformation of solids.
CO 2	Summarize different types of flow, its application in formulation & determination of viscosity by using different viscometers.
CO 3	Outline the physical, physicochemical properties, principles & stability involved in biphasic dosage form.
CO 4	Understand the properties of particles & pharmaceutical powders, their significance in formulating pharmaceutical products & the common methods for characterizing their properties.
CO 5	Define reaction kinetics, reaction order & discuss factors affecting the rate of reaction; describe the degradation & stabilization of medicinal agents as well as accelerated stability testing.

Bagad

Course : Physical Pharmaceutics(BP 407 P)
Academic Year : 2021-2022
Name of Faculty : Ms. Punam Dilip Bagad

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Calculate sedimentation volume, viscosity, reaction rate constant, cloud point, Krafft point, and particle size distribution, relative strength of two acids, energy of activation.
CO 2	Evaluate viscosity, particle size, particle size distribution, and derived properties of any material.
CO 3	Understand effect of salts on stability of hydrophobic sols and concept of accelerated stability studies.

Bagad

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Course : Pharmacology (BP 404 T)
Academic Year : 2021-2022
Name of Faculty : Dr. R.A. Patil

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand general pharmacology including pharmacokinetics and pharmacodynamics.
CO 2	Get in-depth knowledge of adverse drug reactions, drug interactions, drug discovery process and pharmacovigilance.
CO 3	Understand pharmacological actions of drugs acting on Peripheral Nervous system.
CO 4	Explain pharmacological actions of drugs acting on Central Nervous system.

Course : Pharmacology (BP 408 P)
Academic Year : 2021-2022
Name of Faculty : Dr. R.A. Patil , Ms. P.S. Patil

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand concept and instruments used in experimental pharmacology.
CO 2	Explain various common laboratory animals.
CO 3	Understand CPCSEA guidelines, Common laboratory techniques, routes of drugs administration in experimental animals.
CO 4	Demonstrate the effects of various drugs on animals by simulated techniques.

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Course : Pharmacognosy and Phytochemistry I(BP 405 T)
Academic Year : 2021-2022
Name of Faculty : Amruta P. Sonawane

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Introduction to Pharmacognosy including quality control and classification of drugs.
CO 2	Study of Cultivation, collection, processing, storage and conservation of drugs of natural origin.
CO 3	Discuss about plant tissue culture and edible vaccines.
CO 4	Study of Morphology and anatomy of various parts of plants.
CO 5	Study of primary and secondary metabolites of plants including plant products and marine drugs.

Course : Pharmacognosy and Phytochemistry I(BP 409 P)
Academic Year : 2021-2022
Name of Faculty : Amruta P. Sonawane

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Make use of charts for chemical tests of unorganized drugs.
CO 2	Explain identification of powdered crude drug
CO 3	Analyze the plants samples on the basis of physico-chemical parameters
CO 4	Explain quantitative microscopy of crude drug..
CO 5	Explain evaluation techniques for herbal drugs.

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COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-II)
THIRD YEAR B. PHARM

Course : Medicinal chemistry III(BP 601 T)
Academic Year : 2021-2022
Name of Faculty : Dr. D. R. Mali

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Describe classification, nomenclature, structure activity relationship, mechanism of action, adverse effects, therapeutic uses and recent developments in Antibiotics and antimalarial drugs.
CO 2	Describe classification, nomenclature, Chemistry, structure activity relationship, mechanism of action, adverse effects, therapeutic uses and recent developments in Antimycobacterial, Antiviral agents, and Synthetic anti-infective agents.
CO 3	Discuss adverse effects, therapeutic uses and recent developments in adverse effects, therapeutic uses and recent developments in antineoplastic agents.
CO 4	Study the chemical synthesis of selected drugs.
CO 5	Illustrate the importance of drug design and different techniques of drug design.

Course : Medicinal chemistry III(BP 607 P)
Academic Year : 2021-2022
Name of Faculty : Dr. D. R. Mali

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Synthesize and explain reaction mechanisms involved in synthesis of medicinally important compounds and purify them.
CO 2	Learn and extend alternative green chemistry methods like microwave assisted synthesis in synthesis of different compounds.
CO 3	Demonstrate the ChemDraw software for drawing structure and reaction
CO 4	Determine physicochemical properties
CO 5	Understand the process of drug design using software.

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Course : Pharmacology III(BP 602 T)
Academic Year : 2021-2022
Name of Faculty : Mr. Vishal B. Jadhav

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Discuss pharmacology of drugs acting on respiratory and gastrointestinal systems.
CO 2	Understand the mechanism of drug action and its relevance in the treatment of different infectious diseases
CO 3	Understand the principles of toxicology and treatment of various poisonings.
CO 4	Appreciate correlation of pharmacology with related medical sciences.

Course : Pharmacology III(BP 608 P)
Academic Year : 2021-2022
Name of Faculty : Mr. Vishal B. Jadhav

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Demonstrate effects of various drugs (bioassay) on intact experimental animals or on isolated tissue/organ preparations using computer simulations.
CO 2	Estimate and justify the importance of different serum biochemical parameters.
CO 3	Explain the importance of toxicity studies and estimate LDso.
CO 4	Discuss different pharmacokinetic parameters and their estimation.
CO 5	Analyze the importance of biostatistics in experimental pharmacology.

Course : Herbal Drug Technology (BP 603 T)
Academic Year : 2021-2022
Name of Faculty : Mr. R. Y Ghegade

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Recall cultivation and collection practices of herbs and biodynamic agriculture.
CO 2	Understand the WHO and ICH guideline for evaluation of herbal drugs.
CO 3	Explain herbal Nutraceuticals, natural sweeteners, and herb-food and herb-drug interactions.
CO 4	Knowledge about preparation of herbal cosmetics and properties of herbal excipients and drugs.
CO 5	Explain traditional systems of medicines, special emphasis on Ayurveda &; its formulations.
CO 6	Herbal drug patenting, Biopiracy, Traditional Knowledge, Farmers and Breeders Right, GMP.

Course : Herbal Drug Technology (BP 609 P)
Academic Year : 2021-2022
Name of Faculty : Mr. R. Y Ghegade

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Explain preparation and evaluation of herbal and Ayurvedic formulations.
CO 2	Identify suitable method for formulation of cosmetic preparations and their evaluation.
CO 3	Analyze and evaluate the marketed herbal and ayurvedic preparations.
CO 4	Detremination of total alakloids and annins and preliminary phytochemical evaluation.

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Course : Biopharmaceutics and Pharmacokinetics (BP 604 T)
Academic Year : 2021-2022
Name of Faculty : Ms. K.H. Pardeshi

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Students should be able to know the basics in Biopharmaceutics, BCS classification and its application in formulation development.
CO 2	Students should be able to describe pharmacokinetic processes, non-linear pharmacokinetics and their relevance in efficacy of dosage form.
CO 3	Students should be able to learn the concepts of Bioavailability and Bioequivalence studies and its applications in drug delivery system.
CO 4	Students should be able to understand various Compartment models and non-compartment models.
CO 5	Students should be able to know the concepts and mechanisms of Dissolution & IVIVC.

Course : Pharmaceutical Biotechnology (BP 605 T)
Academic Year : 2021-2022
Name of Faculty : Ms. Sneha Dhamne

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand the importance Biotechnology, Enzyme immobilization and Protein Engineering in pharma industries.
CO 2	Understand the concept of genetic engineering, Recombinant DNA Technology.
CO 3	Explain Importance of Immunity, related principle and different techniques in industries
CO 4	Understand the use of microorganism in fermentation technology.

Course : Quality Assurance (BP 606T)
Academic Year : 2021-2022
Name of Faculty : Ms. Punam D. Bagad/ Dr. Prashant L. Pingale/Mr. Sahebrao S. Boraste

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand concept of quality assurance, quality control, GMP, TQM, ISO, QbD, ICH etc.
CO 2	Explain role of regulatory agencies in deciding quality standards; NABL accreditation procedure.
CO 3	Describe role and application of cGMP, GLP & CPCSEA in Pharmaceutical industry; Quality control test of packaging materials.
CO 4	Acquire knowledge of document maintenance in pharmaceutical industry.
CO 5	Explain concept of validation, calibration and qualification.

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COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-II)

FINAL YEAR B. PHARM SEM II

Course: Biostatistics and Research Methodology (BP 801 T)

On successful completion of course, learner shall able to

Sr No.	COURSE OUTCOMES
CO 1	To understand the applications of biostatistics in Pharmacy and Measures of central tendency and measures of dispersion and correlation.
CO 2	Explain the descriptive statistics, Graphics, Correlation, Regression and logistic regression.
CO 3	To understand Probability theory, Sampling technique, parametric tests and ANOVA.
CO 4	To understand the need of research and design of Experiments and experimental studies etc.
CO 5	To know the operation of M.S. Excel, SPSS, R and MINITAB®, DOE (Design of Experiment).
CO 6	To understand the design and analysis of experiments.

Course: Social and Preventive Pharmacy (BP 802 T)

On successful completion of course, learner shall able to

Sr No.	COURSE OUTCOMES
CO 1	Recognize the concepts and evaluation of public health.
CO 2	Relate food to nutrition health, balanced diet, deficiencies and its prevention.
CO 3	Illustrate sociocultural factors and its relation with health.
CO 4	Identify avoidable habits for personal hygiene and health.
CO 5	Explain the principles on the prevention and control of communicable and non-communicable diseases.
CO 6	Identify National health programs its objectives functioning and outcomes.
CO 7	Recognize the community services in rural, urban and school health.
CO 8	Explain the general measures and strategies to be followed in social and preventive pharmacy.

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Course : Pharmacovigilance (BP 805 ET)
Academic Year : 2021-2022
Name of Faculty : Mr. Vishal B. Jadhav

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand importance of drug safety monitoring.
CO 2	Explain History, development, National and international scenario of pharmacovigilance & comprehend dictionaries, coding and terminologies used in pharmacovigilance
CO 3	Understand detection and assessment of new adverse drug reactions, Adverse drug reaction reporting systems and communication in pharmacovigilance, Pharmacovigilance Program of India (PvPI) requirement for ADR reporting in India, ICH guidelines for ICSR, PSUR, expedited reporting, pharmacovigilance planning. CIOMS requirements for ADR reporting
CO 4	Comprehend methods of safety data during pre-clinical, clinical and post approval phases of drugs' life cycle.
CO 5	Write case narratives of adverse events and their quality.

Course : Cosmetic Science (BP 809 T)
Academic Year : 2021-2022
Name of Faculty : Ms. Priya S. Patil

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	To know and explain about Cosmetic and cosmeceuticals products, concept of quasi and OTC drugs and basic study of hair, skin structure.
CO 2	To study of Principles, formulation and building blocks of skin, hair, oral care products.
CO 3	Importance's of herbal care products and sunscreen.
CO 4	Principles of Cosmetic Evaluation of skin colour, hair combing and there benefits
CO 5	To describe about basic Cosmetic problems associated with Hair, skin, oral care.

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Course : Advanced Instrumental Techniques(BP 811ET)
Academic Year : 2021-2022
Name of Faculty : Mrs. S.P. Shelke

On successful completion of course, learner shall able to

No.	COURSE OUTCOME(s)
CO 1	Understand the principles of analytical techniques and its application in analysis of drugs.
CO 2	Explain spectroscopic techniques of analysis including NMR spectroscopy, Mass spectrometry and X-Ray diffraction spectroscopy.
CO 3	Discuss working, principle and instrumentation various analytical techniques
CO 4	Calibration of important analytical instruments
CO 5	Give an account on hyphenated methods of analysis.

Course outcomes checked and verified by

Mr. R. Y. Ghegade	Dr. S. S. Harak	Dr. R. A. Patil	Dr. P. L. Pingale
HoD-Pharmacognosy	HoD- Pharm. Chem	HoD-Pharmacology	HoD- Pharmaceutics

Approved by

Dr. S. V. Amrutkar
Principal

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COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-2022 (TERM-I)
FIRST YEAR B. PHARM

Course : Human Anatomy and Physiology-I (BP101T)
Academic Year: 2021 -2022
Name of Faculty: Ms. G. A. Kapadnis
After completion of this course learner should be able to:

No.	Course Outcome (s)
CO1	Knowledge of the gross morphology, structure and functions of various organs of the human body.
CO2	Understanding of the various homeostatic mechanisms and their imbalances.
CO3	Differentiate between the various tissues and organs of different systems of human body.
CO4	Understand the related knowledge of special senses and nervous system.
CO5	Understanding the co-ordination and working pattern of different organs of each system

Course : Human Anatomy and Physiology-I (BP107P)
Academic Year : 2021 -2022
Name of Faculty: P. S. Patil, Ms. G. A. Kapadnis
After completion of this course learner should be able to:

No.	Course Outcome (s)
CO1	Identify the bones of axial and appendicular skeleton.
CO2	To study the Microscope and heamocytometer
CO3	Method and significance of RBCS count& WBCS count, heamoglobin count, blood pressure, blood group, ESR, bleeding time and clotting time.
CO4	Understand the anatomy and physiology of different body tissues.
CO5	Elaborate the Electrocardiogram
CO6	Method of counting heart rate and pulse rate and its significance

Course: Pharmaceutical Analysis-I (BP102T)
Academic Year : 2021 -2022
Name of Faculty: H. U. Chikhale
After completion of this course learner should be able to:

No.	Course Outcome (s)
CO1	To define and differentiate terminologies in pharmaceutical analysis
CO2	To classify different types of analytical techniques, errors
CO3	Explain basic concepts and principles of aqueous acid base titrations and clarify need of non-aqueous acid base titrations
CO4	Clarify different terms, basic principles and reaction conditions of precipitation, Complexation and redox reaction
CO5	Understand and explain the difference between precipitation and gravimetric analysis.
CO6	Understand the principle and applications of volumetric and electro chemical analysis
CO7	Explain principle and applications of Refractometry.

Course: Pharmaceutical Analysis-I (BP108P)
Academic Year: 2021 -2022
Name of Faculty: H. U. Chikhale/S. P. Shelke
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Understand the apparatus and glassware used in analytical chemistry.
CO2	To choose appropriate primary and secondary standards in standardization and calibration methods
CO3	Understand the principle, reaction condition and factor calculation for data analysis for various volumetric methods of analysis
CO4	Study the interpretation of data and computing the results

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Course: Pharmaceutics- I (BP103T)
Academic Year: 2021 -2022
Name of Faculty: Mrs. Vipulata R. Yeole
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Recall historical background of pharmacy profession.
CO2	Understand basics of dosage form.
CO3	Interpret and handle prescription
CO4	Solve pharmaceutical calculations
CO5	Describe different types of dosage forms
CO6	Identify pharmaceutical incompatibilities

Yeole

Course: Pharmaceutics- I (BP109P)
Academic Year: 2021 -2022
Name of Faculty: Mrs. Vipulata R. Yeole, Mr. S. S. Boraste
After completion of this course learner should be able to:

No.	Course Outcome (s)
CO1	Perform pharmaceutical calculations related to formulation of dosage forms.
CO2	Understand rationale of ingredients used in pharmaceutical formulations.
CO3	Select suitable packaging material for various dosage forms.
CO4	Prepare labels as per regulatory requirements.
CO5	Learn laboratory techniques related to formulation of pharmaceutical dosage forms.

Yeole

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Course: Pharmaceutical Inorganic Chemistry (104T)
Academic Year: 2021 -2022
Name of Faculty: Ms. Deepali D. Bhandari

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Compare different pharmacopoeia, monograph and their significance in pharmaceutical analysis including sources and types of impurities.
CO2	To elaborate preparation, properties of buffers and role of physiological ions in the body.
CO3	Illustrate importance of GI agents, topical agents, dental products, and miscellaneous compounds.
CO4	Explain properties and applications of radioactive substances.

Course: Pharmaceutical Inorganic Chemistry (110P)
Academic Year: 2021 -2022
Name of Faculty: Ms. Deepali D. Bhandari

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	To prepare, perform calculation of inorganic compounds as per I.P.
CO2	To understand principle behind limit test for identification of impurities in pharmaceutical substances.
CO3	To demonstrate identification test for medicinally important compounds.
CO4	To determine different physicochemical properties of inorganic compounds.

Course: Communication Skill (105T)
Academic Year: 2021 -2022
Name of Faculty: Ms. K. H. Pardeshi

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	To understand Elements of communication: Face to face communication, Tone of communication, Body language, Verbal & Non-verbal communication
CO2	To know the basic listening skill: Self-awareness, Active Listening
CO3	Develop the interview skill
CO3	Improve the presentation Skill
CO4	Build up group discussion

Course: Remedial Biology (BP106RBT)
Academic Year: 2021 -2022
Name of Faculty: Ms. Sneha Dhamne

After completion of this course learner should be able to:

No.	Course Outcome (s)
CO1	Understand the living world.
CO2	Explain the five kingdoms of life.
CO3	Understand the basics of Anatomy and physiology of plant.
CO4	Understand the basics of anatomy & physiology animal and human

Course: Remedial Biology (RBP112 P)
Academic Year: 2021 -2022
Name of Faculty: Hemant U. Chikhale

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	To know the handling of microscope and permanent slide preparation techniques.
CO2	To understand the structure of cell and its inclusions.
CO3	To identify various plant parts, and to organize their modifications
CO4	To categorize the physiology of frog by using computer models
CO5	To assess the microscopical study and identification of tissues pertinent to stem, root, leaf, seed, fruit and flower
CO6	To compile the bones identification, blood group, blood pressure and tidal volume determination.

COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-I)
SECOND YEAR B. PHARM

Course: POC- II (BP305P)
Academic Year: 2021-2022
Name of Faculty: Mr. Purkar S. R., Ms. D. D. Bhandari
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Demonstrate laboratory skills like Recrystallization and steam distillation.
CO2	Synthesize and explain the reaction mechanisms involved in synthesis of organic compounds.
CO3	To develop the skill for the separation & qualitative analysis of Binary mixture.
CO4	To demonstrate analysis of fats & oils.

Course: Physical Pharmaceutics –I (BP302T)
Academic Year: 2021 -2022
Name of Faculty: Ms. Punam D. Bagad
After completion of this course learner should be able to:

No.	Course Outcome(S)
CO1	Basic concepts in physical pharmacy of solubility and dissolution, partitioning phenomena, surface phenomena.
CO2	Explain the principle of states of matter, phase rule, pH, buffers and isotonic solutions.
CO3	Knowledge of various laws and theories of gases and correlate them into formation of aerosols
CO4	Acquire skills, knowledge and understand principles, concepts of surface tension and its measurement
CO5	Understand the concept of complexation and protein binding.

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Course: Physical Pharmaceutics –I (BP306P)
Academic Year: 2021 -2022
Name of Faculty: Ms. Punam D. Bagad
After completion of this course learner should be able to:

No.	Course Outcome(S)
CO1	Operate different pharmaceutical laboratory instruments used in determining various physical properties such as surface tension, partition coefficient, pH and solubility.
CO2	Calculate critical solution temperature and effect of addition of electrolyte on CST of phenol- water system.
CO3	Calculate solubility, pKa, surface tension, partition coefficient, refractive index, stability constant and donor acceptor ration, critical micelle concentration, HLB value, Freundlich and Langmuir constant of given sample.
CO4	Understand the concept of states of matter.

Bagad

Course: Pharmaceutical Microbiology (BP303T)
Academic Year: 2021 -2022
Name of Faculty: Mrs. Vipulata R. Yeole
After completion of this course learner should be able to:

No.	Course Outcome (S)
CO1	Understand the concept of Microbiology, Bacteria and Microscopy.
CO2	Explain Sterilization and Identification of Microbes.
CO3	Gain the knowledge of disinfectant, their mechanism of action and their evaluation.
CO4	Aware about various sources of contamination in pharmaceuticals, its prevention.
CO5	Acquire knowledge regarding Aseptic Area, Method of Standardization of vitamins and antibiotic, Application of cell culture in pharmacy.

Yeole

Course: Pharmaceutical Microbiology (BP307P)
Academic Year: 2021 -2022
Name of Faculty: Mrs. Vipulata R. Yeole
After completion of this course learner should be able to:

No.	Course Outcome (S)
CO1	To understand different equipment's and their processing used in pharmaceutical microbiology laboratory.
CO2	To understand the concept of sterilization, laminar air flow, aseptic transfer, sterility testing.
CO3	Able to prepare and sterilize culture media, slant, stab, pour plate, and able to perform sub culturing of bacteria and fungus.
CO4	Able to identify bacteria using different staining technique, hanging drop technique and biochemical test.
CO5	Able to perform microbiological analysis and sterility testing.

Yeole

Course: Pharmaceutical Engineering (BP304T)
Academic Year: 2021-2022
Name of Faculty: Ms. G. A. Kapadnis
After completion of this course learner should be able to:

No.	Course Outcome(S)
CO1	Understand principle, construction, working and theories of various unit operations.
CO2	Explain the basics of Flow of Fluids, Size Reduction and Size Separation.
CO3	Explain the basics of Heat Transfer, Evaporation and Distillation.
CO4	Explain the basics of Drying and Mixing.
CO5	Explain the basics of Filtration and Centrifugation.
CO6	Acquire the knowledge of pharmaceutical Engineering.
CO7	Understand the different material used in the Pharmaceutical Plant Construction and material handling System
CO8	Acquire and understand Theories, types and Prevention of corrosion, Ferrous and non-Ferrous metals, inorganic and organic metals.

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Course: Pharmaceutical Engineering (BP304P)
Academic Year: 2021-2022
Name of Faculty: Ms. G. A. Kapadnis

After completion of this course learner should be able to:

No.	Course Outcome(S)
CO1	Perform small unit operations at Laboratory scale.
CO2	Operate different laboratory instruments used to determine.....
CO3	Explain different pharmaceutical machine used for manufacturing of different dosage form.

COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-I)
THIRD YEAR B. PHARM

Course: Medicinal Chemistry – II (BP501T)
Academic Year: 2021 -2022
Name of Faculty: Dr. D. R. Mali

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Describe classification, nomenclature, structure activity relationship, mechanism of action of Antihistaminic agents and autacoids and Drugs acting on cardiovascular system.
CO2	Discuss adverse effects, therapeutic uses and recent developments in Antihistaminic agents and autacoids and Drugs acting on cardiovascular system.
CO3	Study the chemical synthesis of selected drugs.
CO4	Describe classification, nomenclature, Chemistry, structure activity relationship, mechanism of action of Drugs acting on Endocrine system, Antidiabetic agents and Local anesthetics.
CO5	Discuss adverse effects, therapeutic uses and recent developments in Drugs acting on Endocrine system, Antidiabetic agents and Local anesthetics.

Course: Industrial Pharmacy -I (BP502T)
Academic Year: 2021 -2022
Name of Faculty: Mr. S. S. Boraste

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Summarize the basics of Preformulation studies.
CO2	Explain formulation and evaluation parameters of Tablets and capsules.
CO3	Explain formulation and evaluation parameters of Tablets and capsules.
CO4	Discuss manufacturing considerations in liquid dosage form.
CO5	Discuss formulation considerations in cosmetics and Aerosols.
CO6	Suggest and execute packaging materials for pharmaceutical dosage form.

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Course: Industrial Pharmacy -I (BP506P)
Academic Year: 2021 -2022
Name of Faculty: Mr. S. S. Boraste
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	State the correct use of various Equipments in Pharmaceutics laboratory relevant to Tablet, Capsules, Injections and cosmetics
CO2	Formulate and evaluate tablet, capsules, injection and ointments
CO3	Describe use of ingredients in formulation and category of formulation.
CO4	Prepare the labels so as to suit the regulatory requirements

Course: Pharmacology -II (BP503T)
Academic Year: 2021 -2022
Name of Faculty: Mr. Vishal B. Jadhav
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Understand the mechanism of drug action and its relevance in the treatment of different diseases.
CO2	Appreciate correlation of pharmacology with related medical sciences.
CO3	Discuss pharmacology of drugs acting on cardiovascular, renal and endocrine systems
CO4	Outline basic principles, applications and types of bioassays
CO5	Interpret bioassay of various endocrine hormones, autocoids and drugs.

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Course: Pharmacology -II (BP507P)
Academic Year: 2021 -2022
Name of Faculty: Mr. Vishal B. Jadhav

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Analyze the importance of in-vitro pharmacology and physiological salt solutions (PSS).
CO2	Outline basic principles, applications and types of bioassay.
CO3	Demonstrate effects of various drugs on intact experimental animals or on isolated tissue/organ preparations using computer simulations
CO4	Estimate dose of drug in pharmacological experiments
CO5	Justify the solution to a clinical problem.

Course: Pharmacognosy and Phytochemistry – II (BP504T)
Academic Year: 2021 -2022
Name of Faculty: Mr. R. Y. Ghegade
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Understand the metabolic pathways in formation of secondary metabolites and utilization radioactive isotopes in the investigation of Biogenetic studies.
CO2	General introduction, composition, chemistry & chemical classes, bio sources, modern extraction techniques, characterization, identification, commercial applications and industrial utilization of various phytoconstituents.
CO3	Carryout isolation, identification and analysis of various phytoconstituents.
CO4	Study of basics of phytochemistry, different methods of extraction including non-chromatographic methods of extraction.

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Course: Pharmacognosy and Phytochemistry – II (BP508P)
Academic Year: 2021 -2022
Name of Faculty: Mr. R. Y. Ghegade, Mrs. A. P. Sonawane
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Morphology, histology and powder characteristics & extraction & detection of various crude drugs.
CO2	Exercise involving introduction, isolation & detection of active principles by different methods of extraction and identifications.
CO3	Separation of sugars by Paper chromatography.
CO4	TLC of herbal extract.
CO5	Distillation of volatile oils and detection of phytoconstitutents by TLC.
CO6	Analysis of crude drugs by chemical tests

Course: Pharmaceutical Jurisprudence (BP505T)
Academic Year: 2021 -2022
Name of Faculty: K. H. Pardeshi
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Understand the significance and relevance of pharmacy related Act's in India.
CO2	Describe the qualifications for membership and the make-up of the Board
CO3	Understand the responsibilities of the Board
CO4	Understand significance of Schedules according to D&C Act 1940.
CO5	Gain the knowledge about Patents, procedure for patent application and IPR

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COURSE OUTCOMES (CO) ACADEMIC YEAR 2021-22 (TERM-I)
FINAL YEAR B. PHARM

Course: Instrumental Methods of Analysis (BP701T)
Academic Year: 2021 -2022
Name of Faculty: Dr S. S. Harak & Mrs. S. P. Shelke

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Understand and illustrate spectroscopic methods of analysis.
CO2	Discuss working, principle and instrumentation of Spectrophotometers
CO3	Understand and interpret different chromatographic separation techniques and applications thereof.
CO4	Co-relate different instrumental techniques for drug analysis

Course: Industrial Pharmacy- II (BP 702T)
Academic Year: 2021 -2022
Name of Faculty: Ms. S. S. Dhamne, Ms. P. S. Patil

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Explain the process of pilot plant scale up of pharmaceutical dosage forms.
CO2	Understand the practice and the process of technology transfer from lab scale to commercial.
CO3	Describe the approval process and regulatory requirements of drug products.
CO4	Describe the common measure use in quality.
CO5	Understand the role & responsibility of regulatory agencies in the approval of drugs.
CO6	Describe the organization and responsibilities of national and state licensing authority and guidelines for technology transfer.

Course: Novel Drug Delivery System (BP704T)
Academic Year: 2021 -2022
Name of Faculty: Dr. Prashant L. Pingale

After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	To understand various approaches for development of novel drug delivery systems.
CO2	To know in depth, the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation
CO3	To describe in detailed, ophthalmic drug delivery system
CO4	To know about evaluation of novel drug delivery including microencapsulation, ocular, transdermal DDS.

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Course: Pharmacy Practice (BP 703T)
Academic Year: 2021 -2022
Name of Faculty: Dr. R. A. Patil, Ms. D. D. Bhandari
After completion of this course learner should be able to:

No.	Course Outcome(s)
CO1	Understand Organization of hospital & hospital pharmacy, drug distribution system in hospitals, hospital formulary
CO2	Get in depth knowledge of adverse drug reactions, clinical laboratory tests & their interpretation, investigational use of drugs
CO3	Understand drug distribution system in hospitals, role of hospital pharmacist and their services involved in hospital (viz. TDM, Medication adherence, patient history).
CO4	Comprehend importance and role of pharmacy and therapeutic committee
CO5	Recognise role of community pharmacy & its management, drug store management & inventory control, budget preparation,
CO6	Know role of clinical pharmacy, sale of OTC drugs.

Course outcomes checked and verified by

Mr. R. Y. Ghegade	Dr. S. S. Harak	Dr. R. A. Patil	Dr. P. L. Pingale
HoD-Pharmacognosy	HoD- Pharm. Chem	HoD-Pharmacology	HoD- Pharmaceutics

Approved by

Dr. S. V. Amrutkar
Principal

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COURSE PLAN

Academic Year : 2022-23
Class : S.Y B. Pharm
Course name : Medicinal Chemistry-I
Pattern : 2019P
Name of Faculty: Dr. S. S. Harak, Ms. D.D. Bhandari
Designation : Assistant Professor

Program : B. Pharm
Semester : IV
Course Code : BP
No. of Hrs. /week : 04hrs. /week
Department : Pharm. Chemistry

Course outcomes: On successful completion of course, learner shall able to

1. CO1: Demonstrate synthesis and purification of selected drugs and drug intermediates.
2. CO2: Illustrate the chemical reaction and reaction mechanism involved in synthesis the synthesized compounds.
3. CO3: Perform TLC for monitoring of reactions and purification of synthesized compounds by Column chromatography.
4. CO4: Determine Partition coefficient and Ionization constants for organic compounds

PR. No.	Title of the Experiment	Batch						REF/ text bk	CO/PO/ PEO
		A	B	C	D	E	F		
1.	Synthesis & Purification of Benzimidazole	06-01-23	07-01-23	02-01-23	03-01-23	04-01-23	05-01-23	1,2	1/1,4,11/ 1,5
2.	TLC preparation and monitoring of reaction	06-01-23	07-01-23	09-01-23	10-01-23	11-01-23	12-01-23	1,2	1/1,4,11/ 1,5
3.	Synthesis & Purification of Benzotriazole	13-01-23	14-01-23	16-01-23	17-01-23	18-01-23	19-01-23	1,2	1/1,4,11/ 1,5
4.	Synthesis & Purification of 2,3-diphenyl quinoxaline from Benzil	20-01-23	21-01-23	23-01-23	31-01-23	01-02-23	02-02-23	1,2	1/1,4,11/ 1,5
5.	Synthesis & Purification of Benzocaine	20-01-23	04-02-23	06-02-23	07-02-23	08-02-23	09-02-23	1,2	1/1,4,11/ 1,5
6	Synthesis & Purification of Benzoin	03-02-23	11-02-23	20-02-23	21-02-23	22-02-23	23-02-23	1,2	1/1,4,11/ 1,5
7.	Synthesis & Purification of Phenytoin	10-02-23	25-02-23	27-02-23	21-02-23	01-03-23	02-03-23	1,2	2/1,11/1, 5
8.	Synthesis of Barbituric Acid	10-02-23	04-03-23	06-03-23	28-02-23	08-03-23	09-03-23	1,2	2/1,11/1, 5
9.	Purification of Barbituric Acid	24-02-23	11-03-23	20-03-23	21-03-23	29-03-23	23-03-23	3	2/1,11/1, 5
10.	Synthesis & Purification of Phenothiazine	03-03-23	11-03-23	20-03-23	21-03-23	29-03-23	23-03-23	1,2	2/1,11/1, 5
11. *	Microwave assisted synthesis of Benzimidazole	10-03-23	25-03-23	27-03-23	28-03-23	29-03-23	30-03-23	1,2	2/1,11/1, 5
12.	Determination of partition coefficient of benzoic acid	10-03-23	25-03-23	27-03-23	28-03-23	05-04-23	30-03-23	1,2	3/1,11/1, 5
13.	Determination of partition coefficient of salicylic acid	24-03-23	01-04-23	03-04-23	04-04-23	05-04-23	06-04-23	1,2	3/1,11/1, 5

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14.	Determination of ionization constant acetic acid	31-03-23	01-04-23	10-04-23	11-04-23	12-04-23	13-04-23	1,2	3/1,11/1, 5
15.	Determination of ionization constant of PABA	31-03-23	08-04-23	10-04-23	11-04-23	12-04-23	13-04-23	1,2	3/1,11/1, 5

*Practical to be covered beyond the syllabus.

Reference / Text books:

1. Vogel' s A Text book of Practical Organic Chemistry by Vogel, 3rd edition, The English language book society and Longman group limited, London.
2. 'Organic synthesis' – website: www.orgsyn.org
3. Thin-layer Chromatography: A Laboratory Handbook; Ed. Stahl, Egon, Springer International edition, 2nd edition, Berlin.

(Dr. S. S. Harak & Mrs. D. D. Bhandari)
Submitted by

(Dr. S. S. Harak)
Approved by

(Dr. S. V. Amrutkar)
Principal

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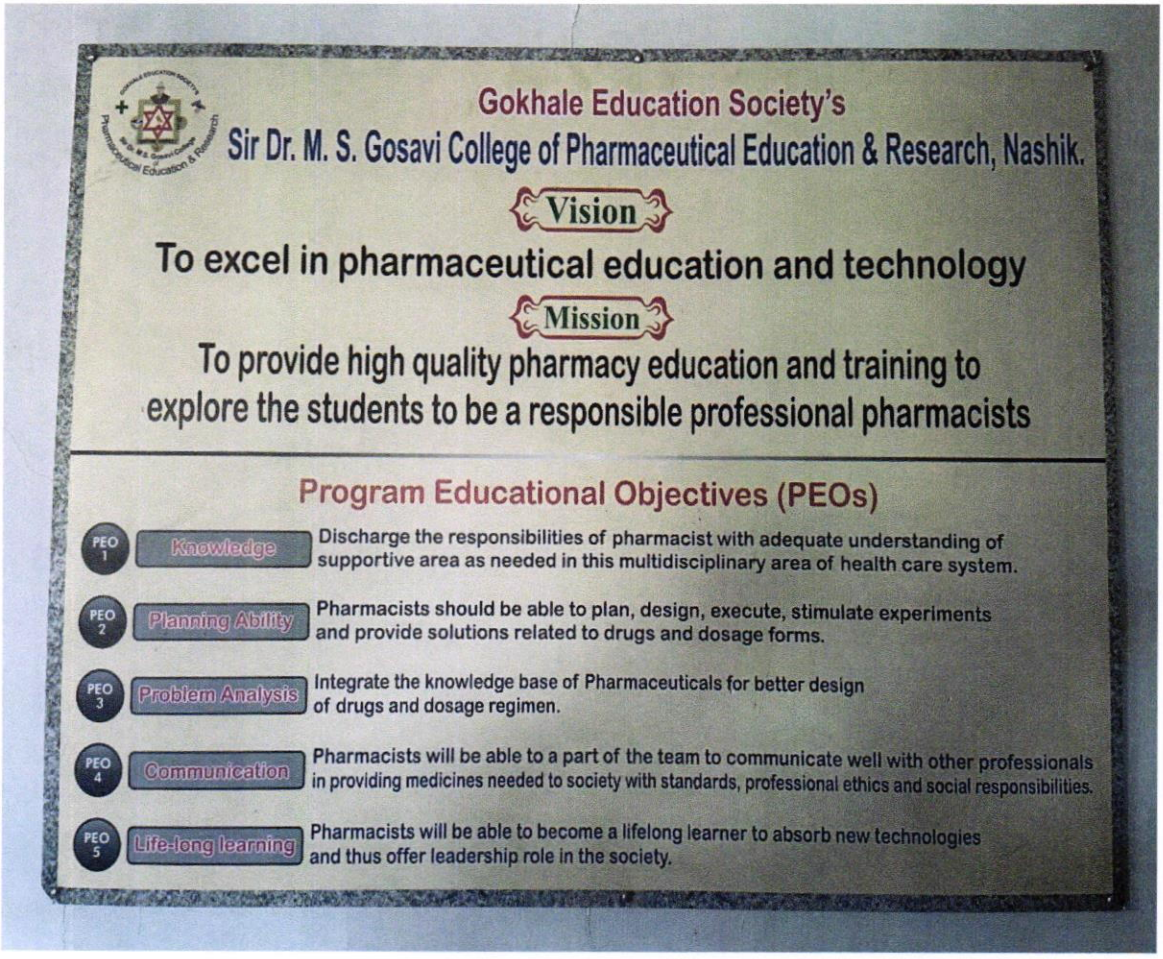

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Vision

To excel in pharmaceutical education and technology

Mission

To provide high quality pharmacy education and training to explore the students to be a responsible professional pharmacists

Program Educational Objectives (PEOs)

PEO 1	Knowledge	Discharge the responsibilities of pharmacist with adequate understanding of supportive area as needed in this multidisciplinary area of health care system.
PEO 2	Planning Ability	Pharmacists should be able to plan, design, execute, stimulate experiments and provide solutions related to drugs and dosage forms.
PEO 3	Problem Analysis	Integrate the knowledge base of Pharmaceuticals for better design of drugs and dosage regimen.
PEO 4	Communication	Pharmacists will be able to a part of the team to communicate well with other professionals in providing medicines needed to society with standards, professional ethics and social responsibilities.
PEO 5	Life-long learning	Pharmacists will be able to become a lifelong learner to absorb new technologies and thus offer leadership role in the society.

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Program Specific Outcome (PSOs)

PSO - 1	Discharge the responsibilities of pharmacist with adequate understanding of supportive area as needed in this multidisciplinary area of health care system.
PSO - 2	Pharmacists should be able to plan, design, execute, stimulate experiments and provide solutions related to drugs and dosage forms.
PSO - 3	Integrate the knowledge base of pharmaceuticals for better design of drugs and dosage regimen.
PSO - 4	Pharmacists will be able to a part of the team to communicate well with other professionals in providing medicines needed to society with standards, professional ethics and social responsibilities.
PSO - 5	Pharmacists will be able to become a lifelong learner to absorb. new technologies and thus offer leadership role in the society

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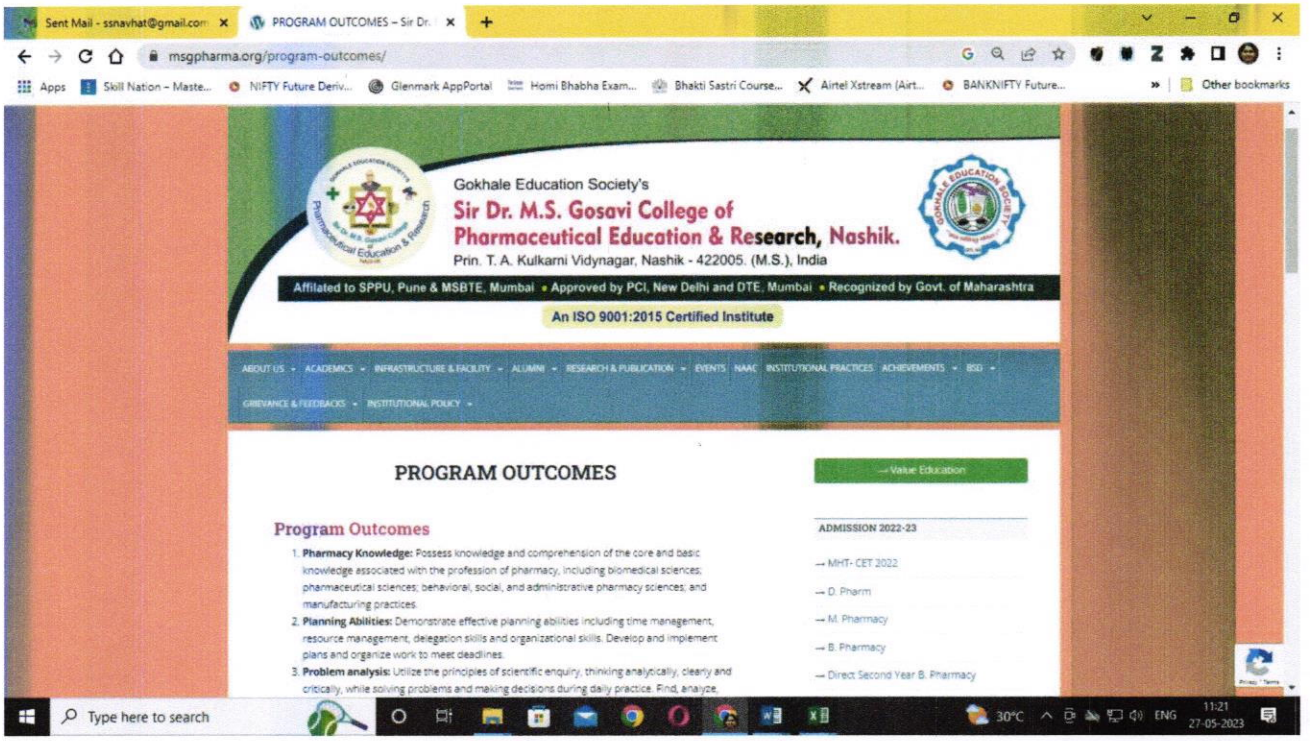
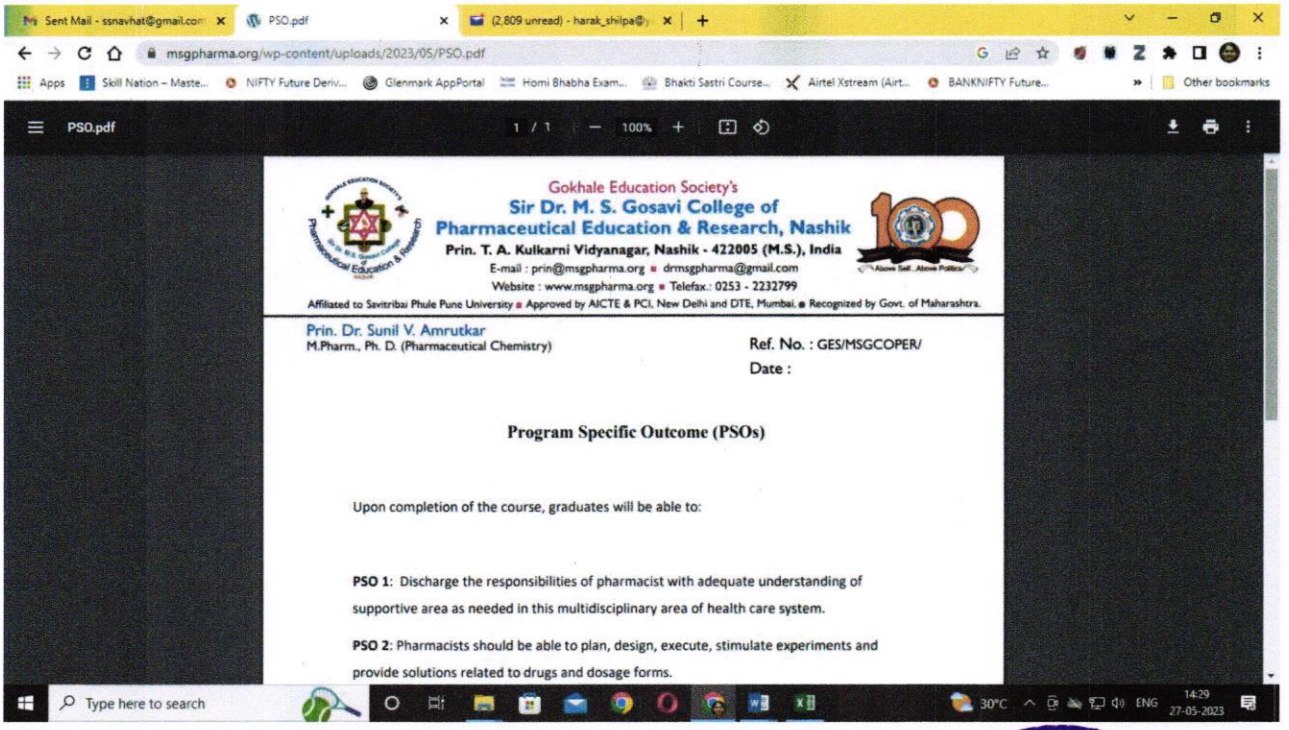
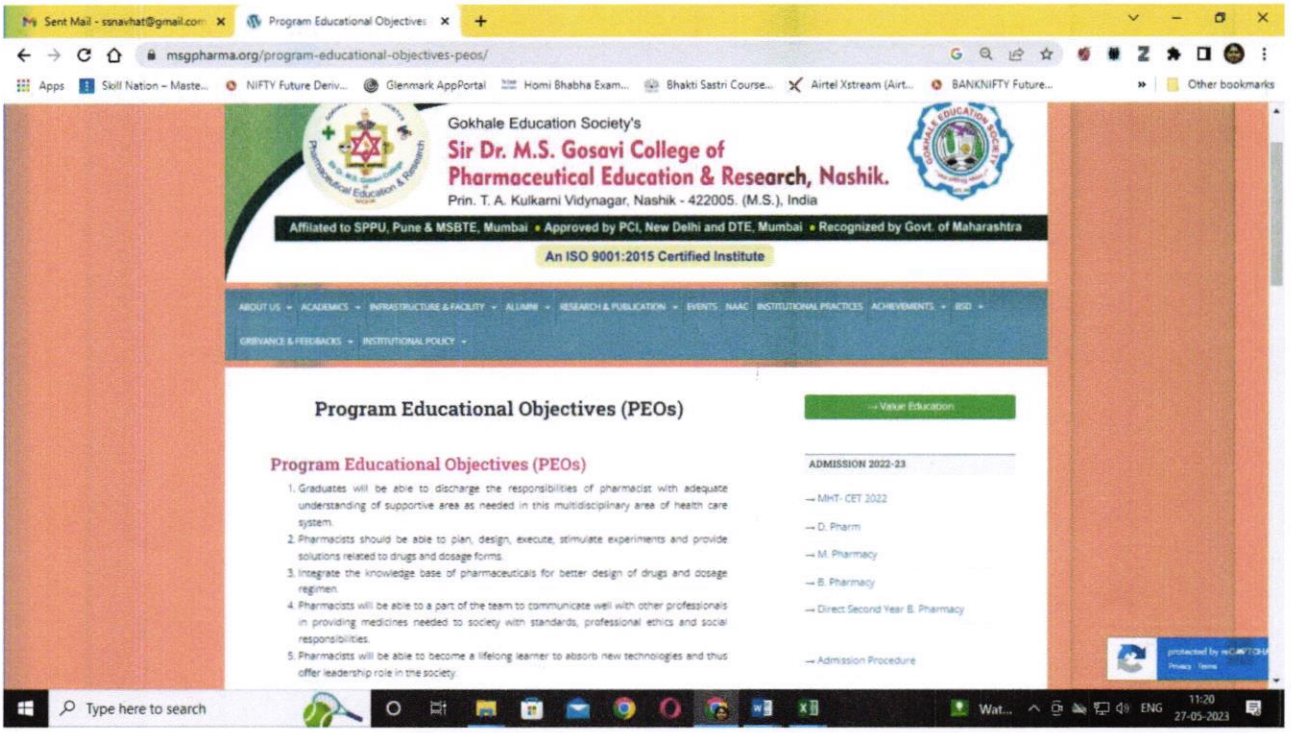
Dissemination of POs, PSOs, COs, on institute website



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An ISO 9001:2015 Certified Institute
Program Educational Objectives (PEOs)
Program Educational Objectives (PEOs)
1. Graduates will be able to discharge the responsibilities of pharmacist with adequate understanding of supportive area as needed in this multidisciplinary area of health care system.
2. Pharmacists should be able to plan, design, execute, stimulate experiments and provide solutions related to drugs and dosage forms.
3. Integrate the knowledge base of pharmaceuticals for better design of drugs and dosage regimen.
4. Pharmacists will be able to a part of the team to communicate well with other professionals in providing medicines needed to society with standards, professional ethics and social responsibilities.
5. Pharmacists will be able to become a lifelong learner to absorb new technologies and thus offer leadership role in the society.
ADMISSION 2022-23
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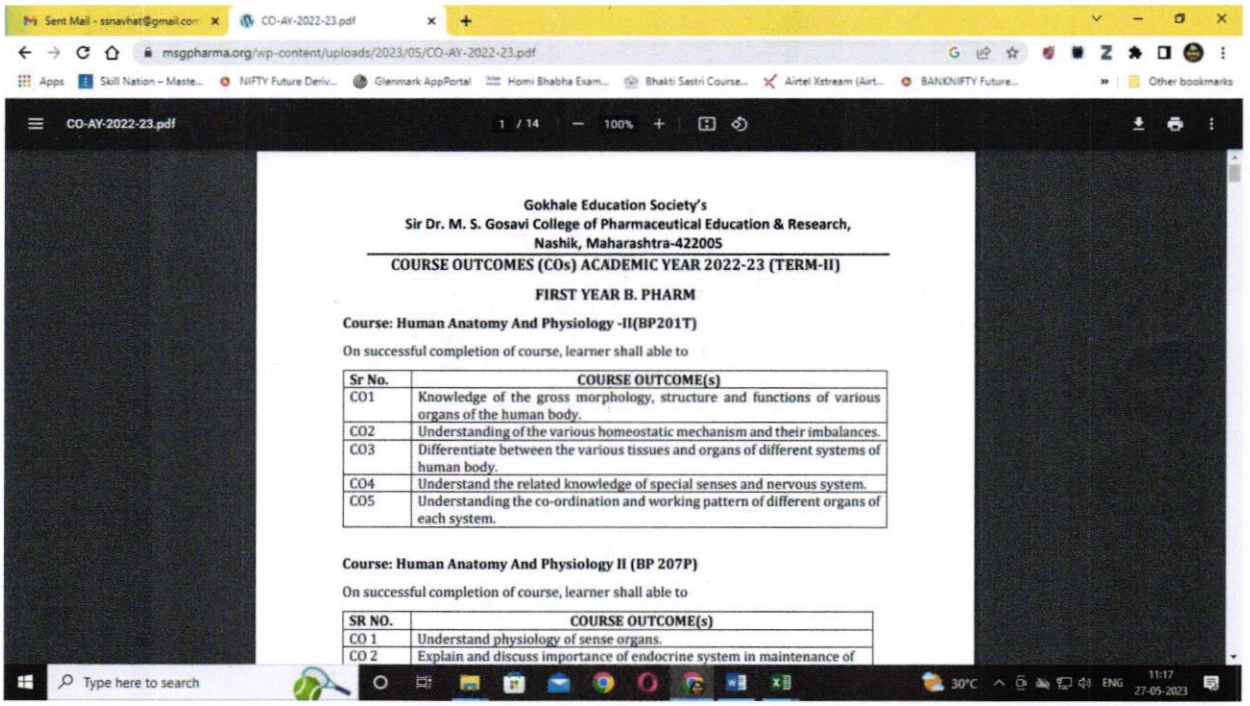
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COURSE OUTCOMES (COs) ACADEMIC YEAR 2022-23 (TERM-II)
FIRST YEAR B. PHARM
Course: Human Anatomy And Physiology -II(BP201T)
On successful completion of course, learner shall able to
Sr No. | COURSE OUTCOME(s)
CO1 | Knowledge of the gross morphology, structure and functions of various organs of the human body.
CO2 | Understanding of the various homeostatic mechanism and their imbalances.
CO3 | Differentiate between the various tissues and organs of different systems of human body.
CO4 | Understand the related knowledge of special senses and nervous system.
CO5 | Understanding the co-ordination and working pattern of different organs of each system.
Course: Human Anatomy And Physiology II (BP 207P)
On successful completion of course, learner shall able to
SR NO. | COURSE OUTCOME(s)
CO 1 | Understand physiology of sense organs.
CO 2 | Explain and discuss importance of endocrine system in maintenance of
Type here to search


S. Gosavi College of Pharm. Edu. & Research
NASHIK-5
Sir D.M.

PO's:

1. Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.

2. Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

3. Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.

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Sir Dr. M. S. Gosavi College of Pharmaceutical Education and Research, Nashik
•ISO 9001:2015 Certified Institute • Permanently Affiliated to Savitribai Phule Pune University (ID: CPHN019840)
• Approved by AICTE (Permanant ID: 1-728030324), PCI-New Delhi, DTE and MSBTE- Govt. of Maharashtra

PO's:

4. Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

5. Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.

6. Professional Identity: *Understand, analyze and communicate the value of their* professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees)

Visit us at: https://mcgpkonnia.org/

PO's:

7. Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.

8. Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.

9. The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.

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PO's:

10. Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

11. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

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PSO's:

Upon completion of the course, graduates will be able to:

PSO 1: Discharge the responsibilities of pharmacist with adequate understanding of supportive area as needed in this multidisciplinary area of health care system.

PSO 2: Pharmacists should be able to plan, design, execute, stimulate experiments and provide solutions related to drugs and dosage forms.

PSO 3: Integrate the knowledge base of pharmaceuticals for better design of drugs and dosage regimen.

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PSO's:

PSO 4: Pharmacists will be able to a part of the team to communicate well with other professionals in providing medicines needed to society with standards, professional ethics and social responsibilities.

PSO 5: Pharmacists will be able to become a lifelong learner to absorb new technologies and thus offer leadership role in the society

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CO's:

Course: Pharmaceutical Analysis-I (BP102T)

Academic Year : 2021 -2022

Name of Faculty: H. U. Chikhale

After completion of this course learner should be able to:

No.	Course Outcome (s)
CO1	To define and differentiate terminologies in pharmaceutical analysis
CO2	To classify different types of analytical techniques, errors
CO3	Explain basic concepts and principles of aqueous acid base titrations and clarify need of non-aqueous acid base titrations
CO4	Clarify different terms, basic principles and reaction conditions of precipitation, Complexation and redox reaction
CO5	Understand and explain the difference between precipitation and gravimetric analysis.
CO6	Understand the principle and applications of volumetric and electro chemical analysis
CO7	Explain principle and applications of Refractometry.

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CO's:

Course : POC -I(BP 208P)

Academic Year : 2021-2022

Name of Faculty : Mr. Purkar S.R.

On successful completion of course, learner shall able to

SR NO.	COURSE OUTCOME(S)
CO 1	To study various safety measures in an Organic Chemistry Laboratory.
CO 2	To develop the skill of purification technique for organic compounds.
CO 3	To study the Systematic Qualitative Analysis of Unknown Organic Compounds.
CO 4	To understand the reaction and its mechanism involved in preparation of derivatives.
CO 5	To develop the skill for construction various Molecular Models.

Visit us at: https://msgpharma.org/

Vision

To excel in pharmaceutical education and technology.

Mission

To provide high quality pharmacy education and training to explore the students to be a responsible professional pharmacist.

Program Educational Objective's

PEO 1 : Knowledge : The pharmacist will incorporate the basic knowledge of pharmaceuticals for better design of drugs and dosage ragimens thereof.

PEO 2: Planning Ability : The Pharmacy graduates should able to plan, intend, implement and reproduce experiments and provide solutions related to drug and dosage forms thereof.

PEO 3 : Problem Analysis : The pharmacy graduates will be able to apply the principles of scientific problems, innovative ideas, clarity and graving while solving the problems and making decisions during daily practice.

PEO 4: Communication : The pharmacists will be able to be a part of a team to communicate well with other professionals in providing medicines needed to the society with the standards of professional ethics and social responsibilities.

PEO 5 : Life-long learning : The pharmacist will be able to become a lifelong learner to absorb newer technologies and thus offer leadership role in society.

Quality Policy

- To Provide state-of-art infrastructure,
- To impart quality education to budding pharmacy professionals,
- To inculcate innovative attitude in the future pharmacists,
- To provide knowledge through experienced academicians and an ideal environment for research and innovation,
- To create a scientific, transparent and impartial examination and evaluation system to gurantee a superlative certification,
- To provide world-class education at an affordable cost to our students.

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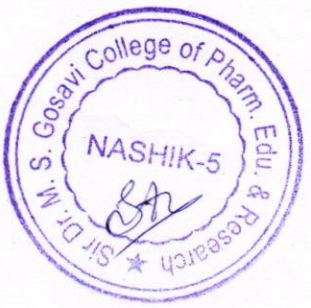
Principal
Gokhale Education Society's
Sir Dr. M. S. Gosavi College of
Pharmaceutical Education & Research
Prin. T. A. Kulkarni Vidyanagar,
Nashik - 422 005.

Program Outcomes :

1. **Pharmacy Knowledge :** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pahrmacy, including biomedical sciences; pharmaceutical sciences; behavioural, social, and administrative pharmacy sciences; and manufacturing practices.
2. **Planning Abilities :** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
3. **Problem analysis :** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyse, evaluate and apply information systematically and shall make defensible decisions.
4. **Modern tool usage :** Learn, select, and apply appropriate methods and procedures, resources, and modern pahrmacy-related computing tools with an understanding of the limitations.
5. **Leadership skills :** understand and consider the human reaction to change, motivation issues leadership and team-building when planning changes required for fulfilment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership role when appropriate to facilitate improvement in health and wellbeing.
6. **Professional Identity :** Understand, analyse and communicate the value of their profeesional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
7. **Pharmaceutical Ethics :** Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behaviour that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
8. **Communication :** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
9. **The Pharmacist and society :** Apply reasoning informed by the contextural knowledge to assess societal, health, safety and legal issues and the consequent responsibilities releavant to the professional pharmacy practice.
10. **Environment and sustainability :** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
11. **Life-long learning :** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.



College official mail ID trial mail

From: MSGCOPER (prin@msgpharma.org)

To: harak_shilpa@yahoo.co.in

Date: Wednesday, 24 May, 2023 at 05:29 pm IST

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With Regards.....

Principal
Gokhale Education Society's
Sir Dr. M.S.Gosavi College of Pharmaceutical Education & Research,
Prin. T. A. Kulkarni Vidyanagar, College Road, Nashik-422005
Maharashtra, India
Telefax: +91 253 2232799
Website: www.msgpharma.org

Vision: To excel in pharmaceutical education and technology.

Mission: To provide high quality pharmacy education and training to explore the students to be a responsible professional pharmacist.

Program Outcomes: 1. Pharmacy Knowledge, 2. Planning Abilities, 3. Problem analysis, 4. Modern tool usage, 5. Leadership skills, 6. Professional Identity, 7. Pharmaceutical Ethics, 8. Communication, 9. The Pharmacist and society, 10. Environment and sustainability, 11. Life-long learning.

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Sir Dr. M. S. Gosavi College of
Pharmaceutical Education & Research
Prin. T. A. Kulkarni Vidyanagar,
Nashik - 422 005.

IQAC MSGCOPER trial mail

From: IQAC MSGCOPER (iqacmsgcoper@gmail.com)

To: harak_shilpa@yahoo.co.in

Date: Wednesday, 24 May, 2023 at 05:29 pm IST

Regards.....

Internal Quality Assurance Cell,

GES's Sir Dr. M. S. Gosavi College of Pharmaceutical Education and Research,

Prin. T. A. Kulkarni Vidyanagar, Nashik-422005, M.S., India

Website: https://msgpharma.org

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An Earnest Request: Save Papers, Save Trees, Think Before Print...

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Nashik - 422 005.

Gokhale Education Society's

SIR DR. M. S. GOSAVI COLLEGE OF PHARMACEUTICAL EDUCATION & RESEARCH

Prin.T.A.Kulkarni Vidyanagar, Nashik-422005

Telefax No. :- 0253-2232799

Internal First Sessional Examinations (ISE-I) - Theory Set: ~~B~~ A

Class: FY (2019) **Sem: II**

Subject: Human Anatomy and Physiology-II **Subject code: BP201T**

Day & Date: Monday 02/05/2022 **Max. Marks: 30** **Time: 1.5 Hours**

Instruction: 1) All questions are compulsory.

2) Draw neat and well labeled diagrams wherever necessary.

3) Figures to the right indicate full marks.

Q. No.	Type of Question	CO	PO	PEO
Q. 1)	**Objective Type Questions (Answer 5 out of 7) 5 x 2 = 10 Marks**			
a	Draw neat labelled diagram of T. S of spinal chord.	4	1,11	1,5
b	Explain the regulation of insulin and glucagon secretion?	1,5	1,11	1,5
c	Enlist the cells which are responsible for acid regulation (HCl) in stomach.	5	1,11	1,5
d	Explain various ventricles of brain.	4	1,11	1,5
e	Enlist 31 pairs of spinal nerves with its sequence.	4	1,11	1,5
f	Describe preganglionic and postganglionic neurons of the ANS.	4	1,11	1,5
g	T3 -give the full name & it is secreted by which gland and where is that gland located in our body.	5	1,11	1,5
Q. 2)	**Long Answers Questions (Answer 1 out of 2)1 x 10 = 10 Marks**			
A	Draw a neat labeled diagram of digestive system. Write structure and functions of each organ.	1,2, 5	1,11	1,5
B	Draw and enlist the parts of brain. Describe in detail the anatomy cerebrum & add a note on functional area of cerebrum.	4	1,11	1,5
Q. 3)	**Short Answers Questions (Answer 2 out of 3) 2 x 5 = 10 Marks**			
I	Write a note on: small intestine.	1,5	1,11	1,5
II	Explain the origin and function of cranial nerves.	4	1,11	1,5
III	Explain the structure of pituitary gland and describe hormone regulated by it.	1,5	1,11	1,5

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Ms. G. A. Kapadnis

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Prin. T. A. Kulkarni Vidyanagar, Nashik-422005

INTERNAL FIRST SESSIONAL EXAMINATIONS (ISE-I) - THEORY

Class: F. Y. M. Pharm (2019 Pattern) **Sem:** II

Subject: Molecular Pharmaceutics **Subject code:** MPH201T

Day & Date: Monday, 02.05.2022 **Max. Marks:** 30 **Time:** 1.5 Hours

N.B.: 1) All questions are compulsory.
2) Draw neat and well labeled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q. No.	Type of Question	PEO	CO	PO
Q. 1)	**Objective Type Questions (Solve 5 out of 7)**		**5 x 2 = 10 Marks**	
a	Difference between liposomes and niosomes.	1,2,5	1,2,3	1,8,11
b	Define microcapsule of microsphere.	1,2,5	1,2,3	1,8,11
c	Give the applications of phytosomes	1,2,5	1,2,3	1,8,11
d	Enlist the strategies of drug targeting.	1,2,5	1,2,3	1,8,11
e	Enlist the types of targeted DDS.	1,2,5	1,2,3	1,8,11
f	Enlist the evaluation parameters of nano particles.	1,2,5	1,2,3	1,8,11
g	Define monoclonal antibodies. Enlist the steps for production of monoclonal antibodies.	1,2,5	1,2,3	1,8,11
Q. 2)	**Short Answers Questions (Solve 2 out of 3)**		**2 x 5 = 10 Marks**	
A	Write a note on preparation and evaluation of liposomes.	1,2,5	1,2,3	1,8,11
B	Write a note on tumor targeting with its strategies	1,2,5	1,2,3	1,8,11
C	Define niosomes, explain its methods of preparation and components	1,2,5	1,2,3	1,8,11
Q. 3)	**Long Answers Questions (Solve 1 out of 2)**		**1 x 10 = 10 Marks**	
I	Explain process involved in drug targeting.	1,2,5	1,2,3	1,8,11
II	Explain method of preparation and evaluation of microspheres.	1,2,5	1,2,3	1,8,11

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P C Pingale